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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,367	07/24/2003	Leon Axel	5986/1K435US1	2452
7278	7590	03/16/2006	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			JACKSON, BRYAN M	
			ART UNIT	PAPER NUMBER
			3762	

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,367

Applicant(s)

AXEL, LEON

Examiner

Bryan M. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/24/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/24/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Information Disclosure Statement***

The Information disclosure statement (IDS) submitted on 7/24/03 is acknowledged. The submission is in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

Claims 4, 8, 13, 17, 19, 21, 31, 34, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 4, 13, 17, 31, and 37, a "first correlating step" lacks antecedent basis. It is suggested to actively claim a "first correlating step" in a prior claim on which the stated claims above are dependent.

As to claims 8, 21, and 34, a "second correlating step" lacks antecedent basis. It is suggested to actively claim a "second correlating step" in a prior claim on which the stated claims above are dependent.

As to claim 19, a "second determining step" lacks antecedent basis. It is suggested to actively claim a "second determining step" in a prior claim on which the stated claim above is dependent.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 8, 10-17, 19-21, 23-31, 33-34, 36-39 are rejected under 35

U.S.C. 102(b) as being anticipated by Shimoni (4865043).

Shimoni discloses selecting a plurality of multi-dimensional windows defining simultaneously the ranges of acceptance for several parameters of an ECG signal acquired during the same beat, simultaneously acquiring cardiac imaging data and the ECG signal from the same patient (col 3, ln 58-63), wherein the ECG signal includes the QRS complex, wherein the shape of the QRS portion is analyzed (col 5, ln 34-36), "gating is defined as synchronizing the images with a physiological signal" (col 1, ln 43-44), wherein "gating" requires a trigger pulse for MRI data acquisition, comparing the amplitude versus time shape of the ECG signal and a template (claim 9), wherein said comparing step includes finding a correlation coefficient (claim 10), data from all heart beats which are similar in type and pass through the same window are accumulated in the same bin (col 5, ln 63-65), multi-gated imaging data is sorted into bins according to the classifications, subsequently the data of certain classes may be rejected (col 8, ln 5-8), wherein rejection of certain classes in light of the accepted classes inherently requires a threshold based on similarity via the comparison of the shape of an ECG signal and a template, wherein a rejected class is considered

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to be a result of a low correlation value and an accepted class is considered to be a result of a high correlation value, summing same bin data to obtain a combined value, wherein a correlation value in light of summing same bin data is considered a weighted score, ECG electrodes, wherein the ECG electrodes would result in ECG channels, wherein a threshold differentiating rejected from accepted bin classification of similar ECG channels in light of summing same bin data and ECG channels would result in an overall threshold derived from individual thresholds, a memory for ECG data (fig 1, 71) and imaging data (fig 1, 72), and a processor (fig 1, 74).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 7, 9, 18, 22, 32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoni (4865043).

Shimoni discloses the claimed invention but does not disclose expressly the shifting forward in time the superimposed QRS complex template over an ECG signal. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the comparing the amplitude versus time shape of the ECG signal and a template, as taught by Shimoni, with the shifting

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forward in time the superimposed QRS complex template over an ECG signal, because Applicant has not disclosed that shifting forward in time the superimposed QRS complex template over an ECG signal provides an advantage, is used for a particular purpose, or solve a stated problem. One of ordinary skill in the art, furthermore, would have expected the Applicant's invention to perform equally well with comparing the amplitude versus time shape of the ECG signal and a template, as taught by Shimoni, because it provides a means for assigning a correlation coefficient value via comparison of an ECG signal to a template, and since it appears to be an arbitrary design consideration which fails to patentably distinguish over Shimoni.

Therefore, it would have been an obvious matter of design choice to modify Shimoni to obtain the invention as specified in the claim(s).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sussman et al. (20030088174) discloses a magnetic resonance imaging using direct, continuous real-time imaging for motion compensation. Gober (5052398) discloses a QRS filter for real time heart imaging with ECG monitoring in the magnetic field of an NMR imaging system and NMR imaging apparatus employing such filter.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan M. Jackson whose telephone number

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is 571-272-7335. The examiner can normally be reached on Monday through Friday, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on 571-272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JEFFREY P. M. RZAB
PRIMARY EXAMINER
3/3/4